

1981

ANNUAL SUMMARY
COOPERATIVE FOREST PEST ACTION PROGRAM

Prepared By

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GENERAL COMMENTS

HIGHLIGHTS

Numerous larvae and egg masses of the Gypsy Moth were found in Jefferson, Morgan and Berkeley Counties.

Aerial surveys were conducted over a ten county area to spot and delimit oak wilt disease. No oak wilt trees were found in the ten county area. The same areas will be flown in 1982 to locate oak wilt trees.

Aerial flights were conducted in eastern and southwestern West Virginia to detect the occurrence of oak wilt. All areas checked indicate the disease is not increasing and seems to be remaining stable. Flights will be conducted in 1982 over the same area to see if the disease is spreading or remaining the same.

The root rot pathogen, Phytophthora cinnamomi, was found for the first time in West Virginia in two Fraser fir Christmas tree plantations.

The pine wilt disease caused by a nematode has now been found throughout West Virginia.

Rhizosphaera needle cast was reported on blue spruce in Kanawha and Morgan Counties.

The beech bark disease complex was reported on 70,000 acres of Monongahela National Forest land near Gaudineer Scenic Area.

The Eastern tent caterpillar populations were extremely heavy in 1981 and caused complete defoliation to host trees. A polyhedrous virus was found in the populations and a decrease of the caterpillar is expected in 1982.

Approximately 1½ million acres of forest land were defoliated by a looper complex in eastern and southwestern West Virginia. This defoliation is believed to be the most ever experienced by West Virginia in any one year.

The Pest Identification Laboratory logged in and answered 861 insect and disease problems in 1981. A total of 3,940 telephone calls requesting assistance or information were received during 1981. This is an increase of 104 insect and disease problems and 348 telephone calls over 1980.

PEST IDENTIFICATION LABORATORY

In order to give a more accurate account of the specimens submitted and the telephone calls that were received in 1981 (January-December), we offer the following:

<u>Kind of Problem</u>	<u>Number of Calls</u>
Forest/Ornamental	678
Household	521
Miscellaneous	454
Lawn/Garden	434
Cultural	205
Vertebrates	347
Pathology Staff	1,301
Total	<u>3,940</u>

Telephone Calls In order of most abundant - top ten

1. ** Vertebrates	347
2. Fleas	183
3. Eastern Tent Caterpillar	171
4. Bees/Wasps/Hornets	162
5. Cultural Information	89
6. Borers	75
7. Ants	73
8. Pesticide Information	58
9. Aphids	53
10. Pantry Pests	51
Total	<u>*1,262</u>

** The vertebrate pest calls included the following: Moles 121; Birds 48; Bats 47; Rodents 35; Snakes 35; Rabbits 17; Squirrels 14; Lizards 8; and the remainder included Chipmunks, Deer, Cats, Frogs, Groundhog, Opossum, Raccoons and Shrews.

* There were an additional 2,678 calls dealing with problems such as: when to prune; what to spray; when to spray; when to plant; what is best chemical; fertilizer; herbicide; etc. What grass seed is best to plant; where can you buy certain products, etc.

The following is a breakdown of when the telephone calls and specimens were received during 1981.

1981

Telephone Calls

<u>Month</u>	<u>Insects</u>	<u>Disease</u>	<u>Totals</u>
JAN	86	90	176
FEB	100	91	191
MAR	158	90	248
APR	366	161	527
MAY	350	162	512
JUN	346	161	507
JUL	421	201	622
AUG	378	117	495
SEP	193	117	310
OCT	100	57	157
NOV	84	38	122
DEC	<u>57</u>	<u>16</u>	<u>72</u>
Total	2,639	1,301	3,940

Pest Identification Laboratory

<u>Month</u>	<u>Insects</u>	<u>Disease</u>	<u>Totals</u>
JAN	10	1	11
FEB	13	3	16
MAR	17	6	23
APR	60	15	75
MAY	103	18	121
JUN	100	33	133
JUL	116	43	159
AUG	101	45	146
SEP	79	12	91
OCT	33	5	38
NOV	25	1	26
DEC	<u>16</u>	<u>6</u>	<u>22</u>
Totals	673	188	861

FOREST INSECTS

Eastern Tent Caterpillar (Malacosoma americana) - This insect has been on the increase since 1977, at which time it was at an all time low. We predicted that the caterpillars would decrease in 1981. The decrease was not noted and caterpillars caused complete defoliation to host plants. However, after damage was completed, a polyhedrosis virus was observed in populations and we are sure there will be very few in 1982. A large black fly (Tachinid) was also noted to be abundant and will certainly aid in reducing populations.

Forest Tent Caterpillar (Malacosoma disstria) - No large areas were found to be defoliated by this insect, however, it certainly was part of the looper complex that defoliated hardwoods in the eastern and southwestern parts of West Virginia. (See Looper Complex).

Fall Webworm (Hyphantria cunea) - This insect had been abundant in the early to mid-70's but populations have subsided and there does not appear to be any substantial increase. Nests were observed throughout the state on various trees, but in no instance were they in great numbers.

Fall Cankerworm (Alsophila pometaria) - During 1980 a small infestation was noted at Dolly Sods, Grant County. However, in 1981 it was difficult to find any caterpillars in that general area. We had thought the populations were on the upswing again but apparently not. The fall cankerworm was a part of the looper complex that occurred in the eastern and southwestern parts of West Virginia. (See Looper Complex).

Walking Stick (Diapheromera femorata) - This insect had, in the past several years (1978-79), caused heavy defoliation to oaks and black locusts in the Eastern Panhandle. In 1981 several areas had walking sticks but defoliation was not evident. Surveys will continue for occurrence of this insect.

Oakleaf Tier (Croesia albicomana) - No egg mass surveys were conducted in 1981 due to limited personnel in the Division. Ground checks and aerial flights conducted in 1981 showed light to moderate damage to oaks in Pocahontas County. This insect seems to fluctuate from year to year and at no time in the past several years caused any large scale damage. This is not to say that the insect cannot cause large scale damage, and so it will be monitored on an annual basis.

Scarlet Oak Sawfly (Caliroa quercuscoccineae) - This insect was once abundant in southern West Virginia and caused defoliation to thousands of acres. Not much was known about the life history of this insect and some major work was done by various individuals

during the years of defoliation. However, for the last several years, the insect has not caused any great amount of damage. It can be found in small areas occasionally and specimens were submitted from yard trees by homeowners.

Southern Pine Beetle (Dendroctonus frontalis) - From all points of view the southern pine beetle has really never been a problem in recent years in West Virginia. However, this is probably due to the fact that large continuous stands of pine are hard to find in West Virginia. Small stands of trees have been lost to this insect in southern West Virginia during past years. A few specimens were submitted in 1981.

Locust Leaf Miner (Xenochalepus dorsalis) - The leaf miner during 1981 seemed to subside in southern West Virginia where it had been prevalent for many years. However, the insect has invaded the higher elevations and moved into the Eastern Panhandle. This makes the first time the insect has been encountered in the Eastern Panhandle and numerous calls were received about the "blight" of locust. Even though the insect removes the chlorophyll from the leaves, the trees seem to hang on and refoliate year after year. I am sure the defoliation causes the tree to come under stress and other insects or diseases could invade the tree.

The Pine Leaf Chermid (Pineus pinifoliae) - This insect continues to cause pineapple shaped galls on red spruce in the higher elevations. The red spruce are not harmed to any great extent by this insect, however, the alternate host, white pine, may become sickly looking and have a yellowish color. Heavy infestations can cause the death of young white pine seedlings. The insect can be found in the higher elevations but little damage was recorded in 1981.

LOOPER COMPLEX

Predictions were made in 1980 that an infestation by the Linden Looper, Erannis tilliaria, would take place in 1981 in eastern West Virginia. Little did we know that the infestation would affect over one million acres.

During late May and early June reports were received that insects were defoliating oaks in Hampshire and Cabell Counties. As the reports flowed into the office, we traveled to these areas and made on-site inspections. After all ground checks and aerial flights were conducted, it was found that moderate to complete defoliation occurred on one million acres of hardwoods in the Eastern Panhandle, and 500,000 acres were defoliated in southwestern West Virginia.

The insects causing this damage in order of abundance were: Linden Looper, Erannis tilliaria; Half-wing Geometer, Phigalia titea; Underwing Moth, Catocola sp; Fall Cankerworm, Alsophila pometaria; Forest Tent Caterpillar, Malacosoma disstria; and Oak Leaf Rollers, (Archips sp.).

The infestations occurred mainly in Berkeley, Morgan, Hampshire, Mineral, Grant and Hardy Counties in the east, and Cabell and Wayne Counties in the southwest. The higher elevations of mountains such as North, Sleepy Creek, Cacapon, Nathaniel, Sidling and New Creek were not defoliated. However, the slopes and ridges and valleys between these mountains were heavily defoliated. None of the defoliation was linked to gypsy moth, which also occurs in Jefferson, Morgan and Berkeley Counties.

Virginia Pine Sawfly (Neodiprion pratti pratti) - This insect was abundant on hard pines in the late 60's and early 70's in southern West Virginia. However, in past years the insect has seldom been noticed and no reports of damage have been received.

Gypsy Moth (Lymantria dispar) - The Gypsy Moth continues to move relentlessly southward and westward. In 1981 the gypsy moth defoliated 12,872,725 acres in the northeast. (See Map No. 1.). Damage in 1981 is the most defoliation the insect has caused since its introduction in 1869. Of the states infested with gypsy moth Massachusetts suffered the greatest amount of defoliation with 2,826,095 acres. At the end of this summary a table is available which shows the amounts of defoliation that have occurred since 1924. Note that the State of Maryland had 3 acres in 1980 and 8,826 in 1981. It will not be long before West Virginia will experience the ravages of the moth.

Burlap Banding for Gypsy Moth - On June 4, 1979, the first larva of the Gypsy Moth was found in Jefferson County. In 1980, 26 larvae were found in Jefferson County at Mountain Mission. In 1981, 37 larvae were found in the three Eastern Panhandle Counties of Jefferson, Morgan and Berkeley. The greatest number of larvae (12) were found at Sleepy Creek Mountain, Morgan County. The larval finds in Berkeley County were at Marlowe (1) in northern Berkeley County and Martinsburg (1). The additional larvae were found scattered from Harpers Ferry to Virginia State Line in Jefferson County. All the larvae were found or collected from under burlap bands placed on host trees. Additional burlap bands will be placed on host trees in additional counties and sites during the spring of 1982.

Gypsy Moth Trapping Program - Approximately 4,000 pheromone traps were placed throughout West Virginia. A 3-Kilometer grid pattern was employed in eastern, north central and northern West Virginia. The remainder of the state was trapped at random with the help of West Virginia Department of Natural Resources, Ser-

vice Foresters, Parks Division and Wildlife Division. Additionally, traps were set and maintained by WVDA and APHIS personnel. See Map No. 2 at the end of Summary.

When the traps were recovered and the number of male moths were counted, a total of 8,295 had been found in 24 counties. The moths were trapped for the first time in Barbour 4; Brooke 9; Hancock 43; Harrison 6; Marion 8; Lewis 1; Marshall 38; Monongalia 12; Ohio 20; Pleasants 2; Preston 96; Randolph 4; Taylor 7; Wetzel 4; and Wood 2. The counties that have had male moth catches in the past and the number of moths trapped in 1981 are as follows: Jefferson 3,466; Berkeley 2,008; Morgan 1,174; Hampshire 855; Mineral 256; Hardy 213; Grant 49; Pendleton 8; and Tucker 10. Of the total 8,295, the 3 Kilometer grid trapping program yielded 5,727 male moths. Special trapping on National Park and State Park lands yielded 465 male moths. Additionally, 250 meter special grids were placed in Jefferson, Morgan and Berkeley Counties and 2,098 males were trapped. The remaining 5 male moth catches were trapped by Service Foresters in Pleasants, Wood and Lewis Counties. See Map No. 3 for breakdown.

Egg Mass Survey - A ground survey was conducted in November to check for egg masses laid by the female moth. Scouting efforts were concentrated around those areas where larvae and large number of male moths were caught. After the surveys were conducted egg masses were found in Morgan (1), Berkeley (1), and Jefferson County (3). One of the egg masses collected in Jefferson County had the egg parasite Ooencyrtus kuwanai clinging to it. This parasite is thought to follow infestations and will occur in the outlying infestations. However, the parasite alone will not control gypsy moth.

Pine Spittle Bug (Aphrophora parallela) - Just recently in 1981 it came to our attention that this insect is capable of causing considerable damage to pines if an infestation has been prevalent for several years. Many times we have found pines that appear off-color and are on the brink of dying. The spittle bug can cause such damage. Numerous plantations in West Virginia have been infested with the spittle bug and we expect this has been the cause of death of many of these trees.

Elk Leaf Beetle (Pyrrhalta luteola) and Larger Elm Leaf Beetle (Monocesti eoryli) - These insects caused heavy defoliation to elms throughout the state. The damage took place in late summer and little, if any, damage was done to trees.

Sycamore Lacebug (Corythucha ciliata) - The sycamore lacebug caused extensive damage to sycamore throughout the state. The leaves of sycamore appeared to have a bronze cast in late August, as if fall colors were early. Many sycamore trees appeared to be on the verge of dying due to the anthracnose and lacebug damage that was prevalent in 1981.

BORERS

With the increased use of wood stoves for primary or supplemental heat in homes comes the increased reports of wood boring insects being found. The most common borer that was submitted for identification was the painted hickory borer (Megacylline caryae). This insect was found in wood piles and in wood which was brought into the home. The rhododendron borer, bronze birch borer, carpenter worm and oak timberworm were other common insects found affecting host plants. The bronze birch borer is very common in the Kanawha Valley area and has caused the death of many white birch trees. Studies on control recommendations are being made and results will be released in the near future.

LEAF MINERS

Other than the locust leaf miner affecting black locust trees, the other trees affected by leafminers were the holly, boxwood, and arborvitae. Undoubtedly, other trees had leafminers but were of little or no consequence.

APHIDS

Aphids, like scale insects, cause injury by withdrawing juices from the host plant. Generally aphids were common throughout the state and could be found on most any plant. The more common aphids were the pine bark aphid, Pineus strobi, on white pine and were especially heavy on Christmas trees that were being sold at retail lots. The aphids caused the Christmas trees to be off-color and sickly-looking. The giant bark aphid, Longistigma caryae, seemed to be abundant this year and was submitted from various parts of the state.

SCALE INSECTS

Scale insects were numerous this year and the following are some of the major ones submitted: The cottony maple scale, Pulvinaria innumerabilis, and the cottony maple leafscale, Pulvinaria acericola, were heavy on maples in Kanawha County. More specimens of these two were submitted than any other. Other scale insects submitted were: obscure scale, Melanaspis obscura, heavy on red oak in Eastern Panhandle; the European elm scale, Gossyparia speria, on elm in Raleigh County; pine needle scale, Chionaspis pinifoliae on red pine in Pocahontas County. Others submitted were: white peach scale, Euonymus scale, San Jose scale, Lecanium scale, Oystershell scale, Magnolia and Tulip tree scale.

OTHERS

The Oak Webworm, Archips fervidanus, was abundant in May on oaks in the Eastern Panhandle. Nantucket tip moth was found causing light damage to Scotch pine in Berkeley Sounty and to red pine in Morgan County.

Gall insects were common throughout the state and continue to be one of the more common problems noticed by homeowners. Gall insects can be found on practically every plant and cause little or insignificant damage. However, the horned oak gall, Callirhytis cornigera, has been causing extensive damage to pin oaks in Kanawha City, Charleston, West Virginia. Studies are continuing on the problem and recommendations for control may be forthcoming.

The spruce gall aphid and cooley spruce gall aphid continue to be problems on Norway spruce and blue spruce, respectively.

The white pine weevil, Pissodes strobi, caused heavy damage to a red pine plantation in Wetzel County.

The southern pine beetle, Dendroctonus frontalis, occurs sporadically in West Virginia and one report of damage was submitted this year from Marion County where one acre of white pine saplings was heavily infested.

The spring elm caterpillar, Nymphalis antiopa, was common in the state and defoliated five (5) aspen trees in Pocahontas County.

The hickory horn devil, Citheronia regalis, was fairly common.

The pales weevil, Hylobius pales, was found causing moderate to heavy damage to 6 acres of Virginia pine on a plantation in Morgan County.

The variable oak leaf caterpillar, Heterocampa manteo, caused damage to a single oak tree in a yard in Kanawha County.

The orange striped oakworm, Anisota senatoria, was common in the Eastern Panhandle and was also submitted from Ritchie County.

The yellow-necked caterpillar, Datana ministra, was found feeding on oaks at Grandview State Park, and on Chinese chestnuts in Ritchie County (10 trees moderate defoliation), and on pin oak in Marion County.

The European pine sawfly, Neodiprion sertifer, was found in Pocahontas County on Scotch pine.

During the late summer and early fall of 1981, large hornets resembling oversized yellow jackets were noticed and reported. These insects are the giant European hornet, Vespa crabro germana, and were commonly found on fruits that were over-ripe or had fallen to the ground.

The periodical Cicada Brood V is due in West Virginia during 1982 and will occur through the northern part of the state. (See map at end.).

PATHOLOGY SECTION

Hardwood Disease Problems

Dutch Elm Disease, Ceratocystis ulmi, continued to be a serious disease problem in West Virginia during 1981. Diseased trees were observed throughout the state. Numerous branch specimens from symptomatic trees were submitted to the Pest Identification Clinic for analysis. In most instances the control procedures recommended included only insecticide sprays and sanitation. In the case of certain high value trees, the pressure injection of fungistatic chemicals was recommended.

Armillariella Root Rot, Armillariella mellea, often kills trees previously stressed by insects, other pathogens or unfavorable environmental conditions. Although considered secondary, this pathogen is capable of killing vigorous trees also. Wounds near the base of trees provide an excellent entrance court for this pathogen. Armillariella root rot is a common problem with ornamental trees. Undoubtedly this association can be traced to wounds caused by lawn and garden equipment, as well as by drought and soil compactions.

Fire blight, Erwinia amylovora, was commonly observed on apple trees as well as other members of the Rosaceae family. A number of specimens were submitted to the Pest Identification Clinic during the summer. Control recommendations included pruning out and destroying diseased branches.

Anthracnose of hardwoods, Gnomonia sp., Gloeosporium sp. On sycamore trees the fungus Gnomonia platani was observed causing moderate defoliation. By mid-June nearly all the sycamore trees had refoliated. Little or no permanent damage resulted.

Oak anthracnose, caused by the fungus Gnomonia quercina, was prevalent in many areas of the state. The foliage on white oak trees became curled and twisted with large brown necrotic spots becoming evident.

Norway maple anthracnose, caused by Gloeosporium apocryptum, was noted on Norway maples in Kanawha County. Only light defoliation resulted from infection.

Phyllosticta leaf spot, Phyllosticta minima, was a commonly observed problem on red and sugar maple foliage. Although unsightly, this fungal disease was expected to cause few, if any, problems, as premature leaf fall due to this problem was very light.

Bullseye leaf spot, Cristulariella pyramidalis, incidence was moderate to heavy this year on maples, ash and other hardwoods. In Charleston, West Virginia, diseased trees began defoliating by mid-July. Repeated premature defoliation in affected trees will result in a loss of vigor and predispose the trees to attack by other pathogens.

Actinopelte leaf spot, Actinopelte dryina, is an infrequently observed disease of red and pin oaks in West Virginia. Normally this pathogen is not found until late summer or early fall. Few, if any, problems are expected as a result of infection.

Beech bark disease complex, Cryptococcus fagisuga and Nectria galligena — In August 1981, the beech scale insect, Cryptococcus fagisuga, was found on Cheat Mountain at the Gaudineer Scenic Area. Subsequent surveys revealed that the scale infestation covered approximately 70,000 acres in Pocahontas and Randolph Counties.

The fungus Nectria galligena was found fruiting on many of the scale infested trees. In the northeast beech bark disease results from the association of the beech scale insect and the fungus Nectria coccinea var. faginata. However, beech bark disease may also result from the association of the beech scale insect and N. galligena. N. galligena is generally considered to be less virulent than N. coccinea var. faginata. To date N. coccinea has not been found in West Virginia.

Nectria canker, Nectria galligena, is a common disease affecting nearly all hardwood trees. Birch trees at higher elevations are commonly found to be cankered while at lower elevations cankers may be observed on sassafras and walnut. To control, plant on good sites and maintain stand vigor by thinning and good forestry practices.

Slime flux, Erwinia nimipressuralis, is commonly observed on shade trees. The disease is most prevalent on elms but has been observed on oaks, maples and other species. Slime flux results when the bacterium E. nimipressuralis infects the wood of living trees. Abnormal pressures build up in the xylem forcing sap out of wounds.

Pin oak blight, Endothia gyrosa, has been observed at several locations in the Kanawha Valley area since 1979. The disease does not appear to be spreading or causing any appreciable damage.

Cedar apple rust, Gymnosporangium juniperi-virginianae, incidence increased from the low incidence level of 1980. Weather conditions in the spring of 1981 were more conducive to infection and disease development.

Maple branch canker, Steganosporium sp., was observed causing limb mortality on saplings and pole-sized timber in Mineral County. The causal fungus was observed fruiting on the bark of dead and dying branches. In the northeast this fungus is commonly found causing branch mortality on trees previously stressed by drought or insect defoliation.

Conifer Disease Problems

Cytospora canker, Cytospora kunzei, is a common problem on Norway spruce throughout the state. This disease generally progresses from the branches near the ground to those higher in the crown. Extensive pitch flow and branch mortality are two of the more commonly observed symptoms.

Cylindrocladium root rot, Cylindrocladium sp., is a perennial problem at the West Virginia forest tree nursery at Parsons. A number of species of trees, both conifer and hardwood, are subject to attack by this disease. However, the black walnut and yellow poplar seed beds seem to incur the most severe losses.

Pinewood nematode, Bursaphelenchus xylophilus, has now been found in eleven West Virginia counties. These counties include: Berkeley, Cabell, Greenbrier, Hampshire, Kanawha, Lewis, Mineral, Monroe, Ohio, Pocahontas, and Putnam. To date the nematode has been isolated from Scotch pine, Austrian pine, red pine and white pine. Undoubtedly the nematode occurs in other counties and efforts will continue to survey for this pathogen.

Atropellis canker, Atropellis tingens, continues to be a problem in a number of Scotch and Austrian pine Christmas tree plantations. Infection usually only results in the mortality of a number of the smaller branches on a given tree. No main stem cankers have been noted.

Hemlock canker is a serious problem in some hemlock ornamental plantings in West Virginia. Diseased plants are found on moist, poorly drained soils. Hemlock canker is thought to be a response to site and not caused by a pathogen.

Diplodia tip blight, Diplodia pini, has been noted throughout the state. Scotch pine, Austrian pine, red pine, pitch pine, and table mountain pine are all known hosts for this pathogen in West Virginia. The pathogen causes branch tips to die back.

Rhizosphaera needlecast, Rhizosphaera kalkhoffi, was found in Morgan County in a blue spruce planting. This disease causes a premature needlecast of blue spruce. Generally the disease begins on the lower branches and progresses up the tree. Infection occurs in May and June, while symptoms appear in the late fall and early spring when the fungal fruiting bodies appear in the stomata of the infected needles. This disease was also reported in the fall of 1981, in Kanawha County on ornamental blue spruce.

Swiss needle cast, Phaeocryptopus gaumanni, is known to occur in several Douglas fir plantations in Mercer and Wood Counties. Symptomatic trees appear chlorotic and are usually rendered unsalable because of their appearance.

Lophodermium needlecast, Lophodermium pinastri, was not a serious problem in Scotch pine Christmas tree plantations in the state in 1981. The dry fall of 1980 was not conducive to infection and disease development. Furthermore, many growers are maintaining their plantations much better.

Naemacylus needlecast, Naemacylus minor, is a common disease in West Virginia Scotch pine plantings. Generally this disease is of little consequence. However, it was observed causing needlecast in one Tyler County plantation. Diseased trees were rendered unsalable because of their thin crown.

Pine pruning fungus, Cenangium sp., surveys were conducted to determine whether the pine dieback problem noted in 1979 was of any consequence in 1981. Little or no evidence was found of the pathogen in the counties where the epiphytotic had been observed. However, the pathogen was found in Preston County causing minor branch dieback problems in a stand of white pine.

Phytophthora root rot, Phytophthora cinnamomi, has been found in several Fraser fir Christmas tree plantings. Fraser fir is known to be highly susceptible to this pathogen. Diseased plants become chlorotic and the current years needles droop. The tree finally takes on a reddish appearance. The root systems of affected trees appear dead and decayed. Only plant seedlings on slopes with well drained soil. Efforts will continue to determine how serious this problem is.

Abiotic Factors

Scorch

Dogwoods in the Charleston area exhibited symptoms of sun scorch in August after several weeks of hot, dry weather. Most of the trees were not permanently injured.

Air Pollution

Air pollution symptoms were not nearly as evident this year as they had been in past years. Oxidant pollution symptoms were only evident on an occasional white pine tree in the southern and eastern sections of the state.

Salt

Salt damage to ornamentals has been a common malady these last few years due to severe winter weather. De-icing salts have been applied in large amounts to help keep the roads ice free. Maples, dogwoods, hemlocks and white pines are the most seriously affected species.

Squirrel Damage

In several mountainous areas of the state, red squirrels have been observed chewing on spruce cones and spruce branch tips. Piles of cones and branch tips may be found on the forest floor. In recreation areas the squirrel has occasionally become a nuisance.

Herbicide Damage

Vandalism involving herbicides seems to be increasing each year. In some cases the herbicide damage resulted after disputes between neighbors. It is difficult if not impossible in most cases to prove who the culprit was. However, through chemical analysis we do know what chemicals were used. Other problems involving herbicides include misapplication problems. Frequently homeowners fail to read and understand the pesticide label. Only through education can we correct this problem.

Projects

White Pine Root Decline (Verticicladiella procera) is a serious problem in many West Virginia Christmas tree plantations.

Because of this problem the West Virginia Department of Agriculture is cooperating with researchers at West Virginia University in studying this disease. One student has completed his Masters Degree on this topic and has published a paper in a prestigious journal. Another student has been conducting research on this topic and will finish his Masters Degree in 1982. Studies conducted at WVU with the assistance of the WVDA include developing and refining an agar isolation media for the pathogen, conducting infrared photography studies and continuing the disease survey to locate new areas where this disease occurs.

Chestnut Blight (*Endothia parasitica*)

The West Virginia Department of Agriculture chestnut blight project is two-fold. Work is being conducted to restore the American chestnut through a selective breeding program utilizing disease resistant American chestnut trees. Efforts are being made to propagate resistant American chestnut through grafting. Grafted trees will be maintained at the Clements and Frametown nurseries. The other area of work involves assisting WVU researchers with their studies concerning the establishment and spread of hypovirulent strains of *E. parasitica*.

Blister Rust Surveys

Detection - 13,440 acres, 582 *Ribes* destroyed. Control area added (new) 1075 acres. White pine acreage added 795 acres. Acreage placed in "no further work" category 2020 acres.

Presuppression - 2000 acres, 22 landowners contacted.

Post-Control Evaluations - 400 acres.
White pine planting sites examined 8.
Ribes planting sites examined 2.

Ribes Eradication - Acres Worked - 2335
Ribes destroyed - 10,874

Status of State and Private Land in West Virginia (In Acres)

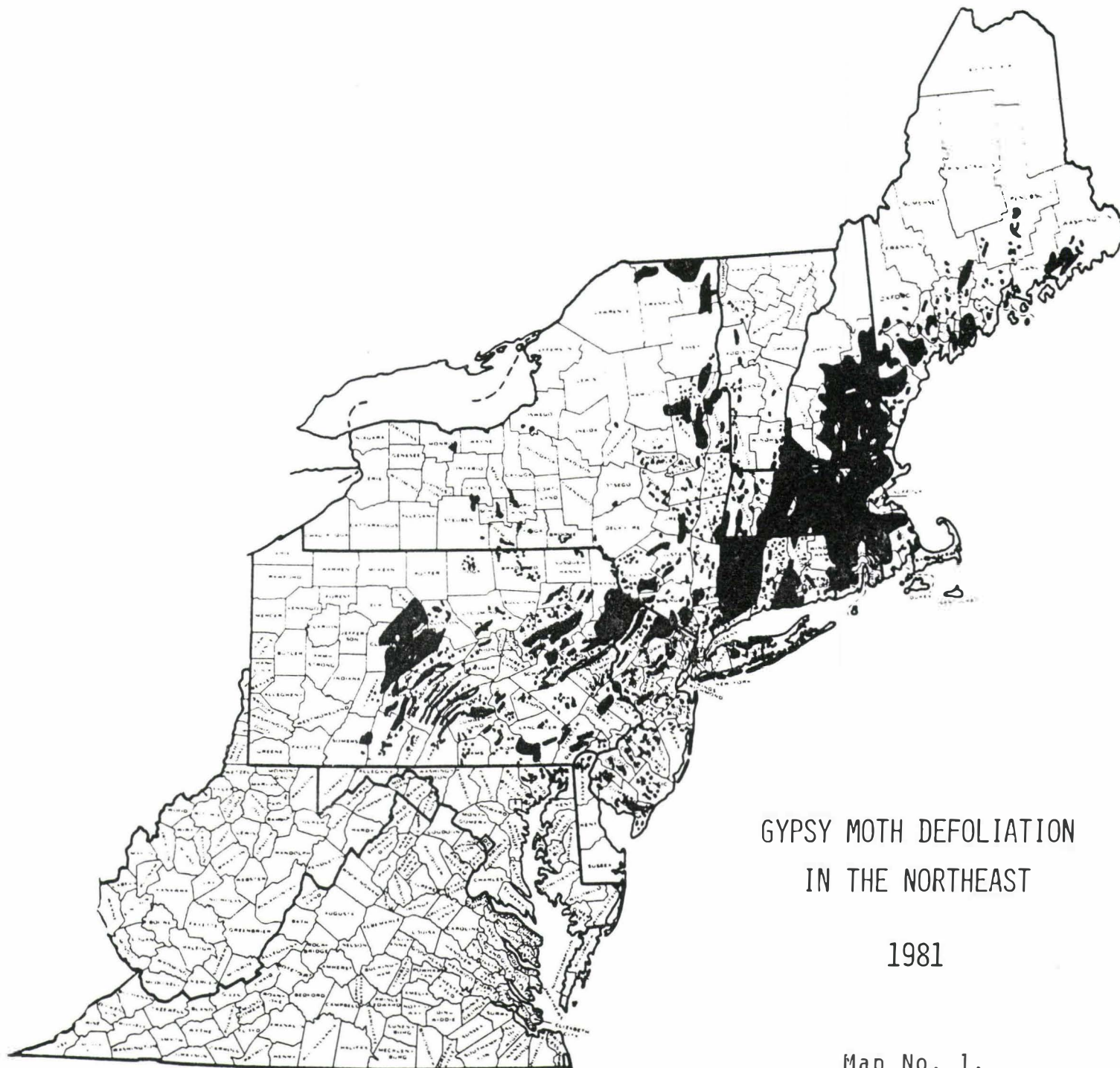
White Pine	Control Area	On Maintenance	No Further Work	Future Work
227,894	416,226	416,226	394,043	22,183

Status of Federal Lands in West Virginia

86,920	144,503	144,503	144,503	- 0 -
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Oak Wilt Detection (*Ceratocystis fagacearum*)

Sixteen high oak wilt incidence quadrangles in the Eastern Panhandle and 20 high incidence quadrangles in the south western section of West Virginia were flown during the summer. Symptomatic trees were marked on quad maps. Disease incidence remained the same as last year. In addition, the following low incidence counties were flown: Randolph, Barbour, Upshur, Nicholas, Pocahontas, Monongalia, Preston, Marion, Taylor, and Harrison. Suspect trees were marked on quad maps. In September ground checks were made to determine if suspect trees in these counties were indeed oak wilt infection centers. Of the suspect trees, none were found to have died of oak wilt. Lightning was responsible for the damage to most of the suspect trees, while others died as a result of mechanical damage.



GYPSY MOTH DEFOLIATION
IN THE NORTHEAST

1981

Map No. 1.

Compiled by Forest Pest Management Staff, Morgantown, West Virginia



